ELSEVIER

Earth and Planetary Science Letters 176 (2000) 549–550

EPSL

www.elsevier.com/locate/epsl

# Contents Volume 176

**Express Letters**

Permafrost as a critical factor in paleoclimate modelling: the Younger Dryas case in Europe
H. Renssen, R.F.B. Isarin, J. Vandenberghe, M. Lautenschlager and U. Schlese ..... 1

200000 yr diatom records from Atlantic upwelling sites reveal maximum productivity during LGM and a shift in phytoplankton community structure at 185000 yr
F. Abrantes ..... 7

**Regular Letters**

Terrestrial accretion rates and the origin of the Moon
A.N. Halliday ..... 17

The timescales of plume generation caused by continental aggregation
S. Honda, M. Yoshida, S. Ootorii and Y. Iwase ..... 31

Mapping out the conduit of the Iceland mantle plume with helium isotopes
K. Breddam, M.D. Kurz and M. Storey ..... 45

Recent fluid processes in the Kaapvaal Craton, South Africa: coupled oxygen isotope and trace element disequilibrium in polymict peridotites
H.-F. Zhang, D.P. Mattey, N. Grassineau, D. Lowry, M. Brownless, J.J. Gurney and M.A. Menzies ..... 57

Origin and evolution of a submarine large igneous province: the Kerguelen Plateau and Broken Ridge, southern Indian Ocean
F.A. Frey, M.F. Coffin, P.J. Wallace, D. Weis, X. Zhao, S.W. Wise Jr., V. Wähnert, D.A.H. Teagle, P.J. Saccocia, D.N. Reusch, M.S. Pringle, K.E. Nicolaysen, C.R. Neal, R.D. Müller, C.L. Moore, J.J. Mahoney, L. Keszthelyi, H. Inokuchi, R.A. Duncan, H. Delius, J.E. Damuth, D. Damasceno, H.K. Coxall, M.K. Borre, F. Boehm, J. Barling, N.T. Arndt and M. Antretter ..... 73

Magnetic fabric and palaeomagnetic analyses of the Plio–Quaternary calc–alkaline series of Aegina Island, South Aegean volcanic arc, Greece
A. Morris ..... 91

Time–temperature relations for the remagnetization of pyrrhotite ($Fe_7S_8$) and their use in estimating paleotemperatures
D.J. Dunlop, Ö. Özdemir, D.A. Clark and P.W. Schmidt ..... 107

Interplate coupling in northeast Japan deduced from inversion analysis of GPS data
T. Ito, S. Yoshioka and S. Miyazaki ..... 117

The Neoproterozoic Supercontinent: Rodinia or Palaeopangaea?
J.D.A. Piper ..... 131

Long-term cosmogenic $^{3}He$ production rates (152 ka–1.35 Ma) from $^{40}Ar/^{39}Ar$ dated basalt flows at 29°N latitude
T.J. Dunai and J.R. Wijbrans ..... 147

Scaling factors for production rates of in situ produced cosmogenic nuclides: a critical reevaluation
T.J. Dunai ..... 157

Evidence for an $^{18}O$-depleted mantle plume from contrasting $^{18}O/^{16}O$ ratios of back-arc lavas from the Manus Basin and Mariana Trough
C.G. Macpherson, D.R. Hilton, D.P. Mattey and J.M. Sinton ..... 171

Nb and Ta incorporation and fractionation in titanian pargasite and kaersutite: crystal–chemical constraints and implications for natural systems
M. Tiepolo, R. Vannucci, R. Oberti, S. Foley, P. Bottazzi and A. Zanetti ..... 185

The Os isotopic composition of Himalayan river bedloads and bedrocks: importance of black shales
A.-C. Pierson-Wickmann, L. Reisberg and C. France-Lanord ..... 203

The primordial noble gases in the Earth: a key constraint on Earth evolution models
M. Ozima and G. Igarashi ..... 219

Pressure solution in sedimentary basins: effect of temperature gradient
X.-s. Yang ..... 233

Melt aggregation within the crust beneath the Mid-Atlantic Ridge: evidence from plagioclase and clinopyroxene major and trace element compositions
L.A. Coogan, P.D. Kempton, A.D. Saunders and M.J. Norry ..... 245

**Express Letter**

'Eclogitic' minerals in a shocked basaltic meteorite
F. Langenhorst and J.-P. Poirier ..... 259

**Regular Letters**

Evaporite mineral assemblages in the nakhlite (martian) meteorites
J.C. Bridges and M.M. Grady ..... 267
Origin of titanian pargasite in gabbroic rocks from the Northern Apennine ophiolites (Italy): insights into the late-magmatic evolution of a MOR-type intrusive sequence
R. Tribuzio, M. Tiepolo and M.F. Thirlwall ..... 281
Carbonate stability and fluid composition in subducted oceanic crust: an experimental study on $H_2O$–$CO_2$-bearing basalts
J.F. Molina and S. Poli ..... 295
The core–mantle boundary under the Gulf of Alaska: No ULVZ for shear waves
J.C. Castle and R.D. van der Hilst ..... 311
Hydrated subducted crust at 100–250 km depth
G.A. Abers ..... 323
A new class of equilibrium geotherms in the deep thermal lithosphere of continents
A. Lenardic and L. Moresi ..... 331
The effects of deep damp melting on mantle flow and melt generation beneath mid-ocean ridges
M.G. Braun, G. Hirth and E.M. Parmentier ..... 339
A fossil melt lens in the Oman ophiolite: Implications for magma chamber processes at fast spreading ridges
C.J. MacLeod and G. Yaouancq ..... 357
Noble gas constraints on degassing processes
M. Moreira and P. Sarda ..... 375
Two mantle plumes beneath the East African rift system: Sr, Nd and Pb isotope evidence from Kenya Rift basalts
N. Rogers, R. Macdonald, J.G. Fitton, R. George, M. Smith and B. Barreiro ..... 387
Extended-Boussinesq thermal–chemical convection with moving heat sources and variable viscosity
U. Hansen and D.A. Yuen ..... 401
A two century record of lead isotopes in high altitude Alpine snow and ice
K.J.R. Rosman, C. Ly, K. Van de Velde and C.F. Boutron ..... 413
Glacial–interglacial variations in the neodymium isotope composition of seawater in the Bay of Bengal recorded by planktonic foraminifera
K.W. Burton and D. Vance ..... 425
Rock-magnetic carriers of century-scale susceptibility cycles in glacial–marine sediments from the Palmer Deep, Antarctic Peninsula
S.A. Brachfeld and S.K. Banerjee ..... 443
Observed effects of mechanical grain-size reduction on the domain structure of pyrrhotite
S.L. Halgedahl and J. Ye ..... 457
Unique thermoremanent magnetization of multidomain sized hematite: Implications for magnetic anomalies
G. Kletetschka, P.J. Wasilewski and P.T. Taylor ..... 469
Discharge of hydrothermal fluids through sediment at the Escanaba Trough, Gorda Ridge (ODP Leg 169): assessing the effects on the rock magnetic signal
M. Urbat, M.J. Dekkers and K. Krumsiek ..... 481
Permian–Triassic boundary magnetostratigraphy from the Southern Alps (Italy)
R. Scholger, H.J. Mauritsch and R. Brandner ..... 495
Neogene evolution of the Aegean arc: paleomagnetic and geodetic evidence for a rapid and young rotation phase
C.E. Duermeijer, M. Nyst, P.T. Meijer, C.G. Langereis and W. Spakman ..... 509
Geologic mapping of tectonic planets
V.L. Hansen ..... 527

**Erratum**

Erratum to: "Phase transformations and partitioning relations in peridotite under lower mantle conditions"
B.J. Wood ..... 543

*Author Index Volume 176* ..... 545